

REMARKS

Claims 1-20 are pending in this application. By this Amendment, claims 17 and 18 are amended to correct informalities.

No new matter is added by these amendments.

I. Reference cited in previously filed Information Disclosure Statement

An Information Disclosure Statement with Form PTO-1449 was filed in the above-captioned patent application on January 12, 2006. The Examiner has not considered reference number 6 of the disclosed information. The Examiner is requested to confirm consideration of the reference by initialing and returning to the undersigned a copy of the Form PTO-1449. For the convenience of the Examiner, a clean copy of the Form PTO-1449 listing only this previously disclosed reference is attached.

II. Allowable Subject Matter

Applicants note with appreciation that claims 5, 9 and 18-21 were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

III. Claim Objections

Claims 17 and 18 were objected to for alleged informalities. Claims 17 and 18 are amended to replace the word "it" with the words "the microactuator " as suggested by the Patent Office. It is thus respectfully submitted that the objection should be withdrawn.

IV. Rejection under 35 U.S.C. §102(b)

Claims 1-4, 7, 8, 10-13 and 17 were rejected under 35 U.S.C. §102(b) as allegedly being unpatentable over U.S. Patent No. 5,123,355 to Hans et al.

The Patent Office alleges that Hans et al. discloses all limitations recited in claims 1-4, 7, 8, 10-13 and 17.

Applicants submit that Hans et al. fails to disclose a device for the electrical initiation of at least one pyrotechnic microcharge as recited in claim 1. Further, Applicants submit that

Hans et al. fails to disclose a microcharge being located at a sufficient distance from the conductive support to be able to be ignited by localized heating of the support as defined in claim 1. Moreover, Applicants submit that Hans et al. fails to disclose that the heating is being carried out via the conductive portion placed in contact with the conductive support, just beneath the pyrotechnic microcharge as required in claim 1.

Instead, Hans et al. merely discloses a rocket ignition assembly having a rocket igniter with a non-conductive core portion, a laminated layer of copper-foil disposed upon an upper surface and a lower surface of a body portion, and an electrically-conductive pyrotechnic disposed on a remote tip of the body portion (see col. 2, lines 41-52). Further, Hans et al. discloses that the tip of each copper-laminated plastic-film strip is dipped into a container in which a conductive pyrotechnic solution has been mixed and which when dried, produces a pyrotechnic coating upon the tip (see col. 3, lines 13-17).

As set forth in the present application, a pyrotechnic microcharge has a mass of, for example, 0.5 μg (page 3, lines 17 and 18). Hans et al. discloses that each igniter will be from about two to about eight inches in length (col. 3, lines 45 and 46). Hans et al. also discloses that an end of each igniter is dipped into a bath containing a pyrotechnic solution that coats the end of each igniter with the pyrotechnic solution to form a pyrotechnic coating thereupon (col. 3, lines 1-8). As illustrated in FIGS. 3C and 3D of Hans et al., the pyrotechnic coating not only covers the tip of the igniter, but also covers a portion of the peripheral walls of the igniter which has a total length of between two and eight inches. The pyrotechnic coating in FIGS. 3C and 3D would appear to clearly have a mass greater than the 0.5 μg mass for a microcharge as defined in the present application. Therefore, Applicants submit that the pyrotechnic coating produced by dipping the tip of the igniter into a container of pyrotechnic solution as taught by Hans et al. is not a microcharge of pyrotechnic material as required in

claim 1. Accordingly, Hans et al. fails to disclose a device for the electrical initiation of at least one pyrotechnic microcharge as recited in claim 1.

Further, Hans et al. fails to disclose a device for the electrical initiation of at least one pyrotechnic microcharge and a microcharge being located at a sufficient distance from the conductive support to be able to be ignited by localized heating of the support as defined in claim 1. Hans et al. discloses that the pyrotechnic solution for producing the coating is a dry electrically conductive pyrotechnic coating (see col. 3, lines 21-24). Further, Hans et al. discloses that current from a battery passes through the conductive pyrotechnic layer (see col. 4, lines 56-59). Still further, Hans et al. discloses that resistance by the coating to the current flow therethrough causes rapid heating and ignition of the pyrotechnic coating. Therefore, the pyrotechnic coating according to the teachings of Hans et al. is ignited due to self-heating caused by resistance therein to the current passing through the coating.

Applicants submit that the pyrotechnic microcharge of the present claims is not electrically conductive and is not heated and ignited by resistance as with the pyrotechnic coating of Hans et al. Instead, the pyrotechnic microcharge of the present claims is ignited by heat from the conductive support which is located a sufficient distance from the microcharge. Further, a conductive portion of the support is placed in contact with the conductive support, just beneath the pyrotechnic microcharge to heat the conductive support. However, the conductive portion of Hans et al. (item 25 set forth on page 3 of the Office Action) does not contact the finger 34 just beneath the pyrotechnic layer 17 (see FIGS. 2 and 4). Therefore, Hans et al. fails to disclose that the heating is being carried out via the conductive portion placed in contact with the conductive support, just beneath the pyrotechnic microcharge as required in claim 1.

Applicants submit that claims 11-18 are also not anticipated by Hans et al. Applicants also submit that Hans et al. fails to disclose a microactuator comprising an actuating element

that can be actuated by the gases emanating from the combustion of at least one pyrotechnic microcharge as required in claims 11-18. Hans et al. discloses a rocket igniter. The goal of the rocket igniter is to induce an explosion of a rocket. The goal of the rocket igniter is not to produce a gas that is used as an actuation means as the microactuator recited in claims 11-18. Moreover, Applicants submit that the microactuator of claims 11-18 include the features of the device defined in claims 1-10 which are also not disclosed in Hans et al.

In view of the foregoing, Hans et al. fails to disclose each and every limitation of independent claim 1 and thus cannot anticipate claim 1, or any of the additional features recited in the dependent claims thereof. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

V. Rejections under 35 U.S.C. §103(a)

Claims 14-16 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hans et al. in view of U.S. Patent No. 6,105,503 to Baginski et al. This rejection is respectfully traversed.

Baginski et al. does not remedy the deficiencies of Hans et al. as described above with respect to claim 1, from which claims 14-16 depend.

The Patent Office acknowledged that Hans et al. does not teach a film that is made of aluminum. The Patent Office introduced Baginski et al. as allegedly disclosing a conductive film made of aluminum for initiating a pyrotechnic device. The Patent Office alleges that the subject matter of claims 14-16 reads on the disclosed pyrotechnic device as taught by Hans et al. in view of Baginski et al.

However, Applicants assert that even if Baginski et al. were to have been combined with any of Hans et al. as alleged by the Patent Office, the deficiencies of Hans et al. as described above with respect to claim 1 would not have been remedied.

Accordingly, reconsideration and withdrawal of the rejection of claims 14-16 under 35 U.S.C. §103(a) are respectfully requested.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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WPB:BCA/hs

Attachment:
Form PTO-1449

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